

U.S.S.N. 10/707,368

- 2 -

81092489

**IN THE CLAIMS:**

1. (currently amended) A simulation system for simulating an operation of an automotive vehicle comprising:

an input providing vehicle information and path information, an initial steering wheel input, and an initial look ahead point, wherein the path information comprises a road radius of curvature;

a controller having a vehicle computer model therein, said controller programmed to determine a curvature of an intended path from the path information, determine a look ahead scale factor as a function of the intended path radius of curvature, determine a revised look ahead point as a function of the look ahead scale factor, determine a steering wheel angle input to the computer model by comparing the revised look ahead point and the intended path, operate the computer model with the steering wheel angle input, and generate an output in response to the vehicle model and the initial steering wheel input ~~or the first steering wheel input.~~

2. (currently amended) A system as recited in claim 1 wherein the look ahead scale factor is directly proportional to ~~[[a]]~~ the radius of curvature of the intended path.

3. (currently amended) A system as recited in claim 1 wherein, during straight-line vehicle travel, the look ahead scale factor is about 62 percent of a predetermined maximum scale factor.

4. (currently amended) A method of operating a vehicle computer model having vehicle information and path information therein comprising:

determining a curvature of an intended path from the path information, said path information including a road radius of curvature;

determining a look ahead scale factor as a function of the intended path curvature;

determining a look ahead point as a function of the look ahead scale factor;

U.S.S.N. 10/707,368

- 3 -

81092489

determining a steering wheel angle input to the computer model by comparing the look ahead point and the intended path; and  
operating the computer model with the steering wheel angle input.

5. (currently amended) A method as recited in claim 4 wherein the look ahead scale factor is directly proportional to ~~[[a]]~~ the curvature of the intended path.

6. (currently amended) A method as recited in claim 4 wherein, during straight-line vehicle travel, the look ahead scale factor is about 62 percent of a predetermined maximum scale factor.

7. (currently amended) A method of operating a vehicle computer model having vehicle information and path information therein comprising:  
providing an initial steering wheel angle;  
determining a curvature of an intended path from the path information, said path information including a road radius of curvature;  
determining a look ahead scale factor as a function of the intended path curvature;  
determining a look ahead point as a function of the look ahead scale factor;  
when the vehicle is not on target, determining a revised steering wheel angle input to the computer model by comparing the look ahead point and the intended path;  
operating the computer model with the revised steering wheel angle input;  
and  
when the vehicle is on target, maintaining a ~~previously determined~~ the initial steering wheel angle.

8. (currently amended) A method as recited in claim 7 wherein the look ahead scale factor is directly proportional to ~~[[a]]~~ the curvature of the intended path.

U.S.S.N. 10/707,368

- 4 -

81092489

9. (currently amended) A method as recited in claim 7 wherein, during straight-line vehicle travel, the look ahead scale factor is about 62 percent of a predetermined maximum scale factor.